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ABSTRACT

Alternative funding mechanisms for appropriating operating and capital outlay revenue for public colleges and universities are described. The following conclusions are drawn: (1) Budget formulas are utilized by 25 of the 50 states in allocating funds to higher education. (2) Budget formulas are used predominantly in budget areas where data related to expenditures are most easily quantifiable, such as instruction and departmental research. (3) Budget formulas are an effective means of implementing zero-base budgeting. (4) They are more easily understood than other methods, but may not be flexible enough to reflect actual needs. (5) A budget formula for Michigan colleges and universities should provide equal funding for programs of instruction and support services where quantifiable data is available to indicate that programs and services are comparable. (6) The budget formula should provide an equitable foundation of support for higher education, but should recognize differences in the role and mission of individual institutions. (7) The funding mechanism should provide for exceptions to the formula-calculated amount if the institution can support such a request with adequate rationale. (Author/LBH)

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FORMULA FUNDING MECHANISMS FOR STATE SUPPORT OF PUBLIC COLLEGES AND UNIVERSITIES IN MICHIGAN BASED ON A STUDY OF FUNDING MECHANISMS ACROSS THE NATION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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HE 008 318

MICHIGAN DEPARTMENT OF EDUCATION
June, 1976

FOREWORD

Statement of Problem

What are the various funding mechanisms employed by other states to appropriate operating and capital outlay revenue for public colleges and universities? How successful are these mechanisms in meeting the objectives of fairness and equity?

Background

In his meeting with the State Board of Education in December, 1975 and further in his 1976 State of the State Message, the Governor charged the State Board of Education with the responsibility of advising him on the need for a uniform funding system for public colleges and universities.

The Governor suggested that this review might include:

1. A critique of the present funding mechanism.
2. A review of alternative funding mechanisms utilized by other states, and an evaluation of the success of these mechanisms in meeting the objectives of fairness and equity.
3. Recommendations for adoption of an alternative system for allocating state funds to institutions of higher education, which would address the issue of:
   a. maintaining the present system
   b. whether funding should be based on differential level of support related to institutional roles, mission, and program quality, and
   c. whether funding should be comparable for all institutions based on instructional program and level of instruction.

This document was developed as a response to the concerns expressed to the State Board of Education by the Governor, and his charge to the Board to advise him as to its recommendations.

Following is a summary of the conclusions and recommendations contained in the report:

- Budget formulas are utilized by 25 of the 50 states in allocating funds to higher education institutions. Other review techniques include evaluation of indicators or other measures of support, cost comparisons, budget base review, or various combination of techniques.

- Budget formulas are used predominantly in budget areas where data related to expenditures is most easily quantifiable (such as instruction and departmental research).

- Budget formulas are an effective means of implementing zero-base budgeting.

- Budget formlas are generally more easily understood than other methods, but may not be flexible enough to reflect actual needs.

- A budget formula for Michigan colleges and universities should provide equal funding for programs of instruction and support services where quantifiable data is available indicating that programs and services are comparable.

- The budget formula should provide an equitable foundation of support for higher education, but differences in the role and mission of individual institutions should be recognized.

- The funding mechanism should provide for exceptions to the formula-calculated amount if the institution can support such a request with adequate rationale.

The Question of Equity versus Quality

Experience with budget formulas indicates that there are difficulties and deficiencies as well as advantages in their use. One criticism which frequently surfaces is that the formula method does not provide recognition to the divergent quality of programs offered by state colleges and universities. The assumption is that there are variations in quality among public institutions as well as among programs, and that there is a resultant variation in costs as well. Further, this criticism assumes that the higher the program quality, the higher its costs will be, and the more appropriations support the program should receive. But this criticism fails to provide any definition of quality other than high cost, and does not explain why quality depends on high cost. Finally, the question arises as to whether public policy should encourage differences in quality among programs offered by public institutions, if indeed such differences exist.

It is hoped that this report will provide a basis for the discussion of alternative funding mechanisms for the support of one of the state's most valuable resources, its colleges and universities.

JOHN W. PORTER
Superintendent of
Public Instruction

TABLE OF CONTENTS

	Page
I. AN INTRODUCTION TO FORMULA BUDGETING	1
The Objective of Equity	3
The Objective of Adequacy	8
The Budget Formula as a Means to Achieve Equity and Adequacy	10
Summary and Conclusions	12
II. A COMPARISON OF STATE FUNDING MECHANISMS	15
Review Techniques: Formulas vs. Indicators	15
Current Utilization of Formulas	18
III. CRITERIA AND CHARACTERISTICS OF STATE FORMULAS	20
Budget Areas Recognized by Formulas	20
Computational Methods Used in Formulas	22
The Comparative Analysis	22
Performance Criteria Developed for Budget Formulas	22
Acceptability of Current State Budget Formulas	24
Summary of Current State Budget Formulas	27
Conclusions	30
Recommendations	32
APPENDIX A - DEFINITION OF TERMS	34
APPENDIX B - METHODS OF BUDGETING OR ALLOCATING FUNDS FOR INSTRUCTION AND DEPARTMENTAL RESEARCH	37
APPENDIX C - SELECTED BIBLIOGRAPHY	47

PART I

AN INTRODUCTION TO FORMULA BUDGETING

There are two primary objectives to be accomplished in any state government mechanism for allocating appropriated support to public institutions of higher education. One objective is an appropriate degree of equity in the distribution of state funds among the various individual institutions of higher education. Secondly, an appropriate degree of adequacy in the total support provided by the two basic sources of operating income for the instructional, service and research activity of public colleges and universities: state appropriations from general fund tax revenues and institutional charges to students for instruction. It is important to be aware that the role of state governments is substantial in the support of public higher education, providing as of 1974-1975 the largest single source of institutional income.

State governments, particularly since 1945, have been the governmental bodies making higher education widely available to the traditional college age population and to other citizens as well. The emphasis of state support to higher education is not contained solely to the provision of learner instruction but is aggregated among many goals: the advancement of knowledge, the promotion of educational justice, the growth and appreciation of culture, the practical application of knowledge and the critical evaluation of social performance.

Since 1944 and the passage of the so-called G.I. Bill of Rights, public concern has been centered upon the support of students enrolled in institutions of higher education. There have always been costs born by the student enrolled in higher education institutions. These are the

cost of tuition and fees, the cost of room and board away from home or the cost of room and board at home, the cost of books, transportation, personal maintenance, health care and the cost of foregone income. State and local government contribution to these costs are made essentially through a policy of low or even no tuition charges. The policy of low or no tuition was based on the assumption that parental assistance and part-time employment would supply the necessary income to keep a motivated student enrolled. Gifts and endowment funds of colleges and universities also began to provide scholarships for promising and financially needy students.

Following the Second World War, access to higher education became a growing public issue. The recognition of the need to rectify past forms of racial and ethnic discrimination which have restricted access to higher education for certain groups of persons: Blacks, American Indians, Spanish Americans, and others fostered a concern for educational justice. This interest arose, in part, from a desire to promote social mobility, to ensure the youth who had promising abilities and intellect had an opportunity to develop those abilities regardless of socio-economic status. This interest also arose, in part, from the continuing increases of costs to students by institutions both public and private, increases required for additional institutional income which could be offset for those students of low income only through direct financial support. The result was that student financial support became a major issue of public policy discussion and action. It is important to note that there is a close relationship between the financing of institutions and the financing of students. These two concerns cannot be discussed separately since public policy focused upon one affects the other.

The Objective of Equity

Every state government must deal with the question of how it is to achieve some appropriate degree of equity in the allocation of state funds to the various campuses and their respective programs. This question is significant because almost every state has more than one public institution of higher education and each campus tends to offer several different programs. The alternative chosen by most states to appropriate state support to institutions of higher education has been an objective formula or method rather than distribution based solely upon political competition among the institutions. The drive for political advantage by one state college or university generally results in similar pressures on the part of other state institutions and their respective political supporters. The ensuing legislative disagreement stemming from the competing institutions located in different regions of the state can and frequently does lead to deadlocks with no legislative action being taken. The import of the potential institutional political competition has been that state colleges and universities have found it more advantageous to work together just as state governments have established administrative mechanisms to deal with the state-wide needs of higher education. The critical issue of state government appropriation policy and practice becomes the distribution of the available appropriations among multiple institutions of higher education

To declare that state government appropriations in support of institutions of higher education shall be based on a principle of equity is not a complex and difficult public policy to promote. However, the determination of what constitutes equity in the allocation of state appropriation support is extremely difficult and complex both in

administrative and legislative practice. Institutions of higher education have different income needs and rationales for additional state support based upon their respective programs, institutional history and perceived roles. The demands for state appropriations to support public higher education have increased substantially due to the growth and expansion of programs, facilities, and campuses during the 1950's and the 1960's when the then established public institutions were unable to meet the needs and demand for higher education.

In the distribution of state government appropriations to public colleges and universities the objective of equity is to provide support to each institution according to its needs. As in recent years, when the total state appropriation available for the support of higher education is below the level that each institution has determined as its need, then a funding mechanism or formula for distribution is mandatory. The concept of equity, as employed here, should not be confused with equality. The concept of equality is translated into providing the same amount of state income per full-time equivalent student regardless of the variance of campus size and enrollments. But equity does not mean equality because program differentiation means different costs levels, enrollment size, and other associated factors, equity in the distribution of state appropriation requires differentiation according to program offerings and enrollments.

The size of enrollment at an institution merits particular attention because of certain cost factors or economies of scale which bear upon funding needs. Per student costs of instruction at the margin are different from average costs of instruction per student. The addition of one or two more students or even twenty depending on the size and

nature of the program may be added to an instructional program without much if any extra instructional cost. The operation of an economy of scale means that the average cost per student is usually reduced as student enrollment in a program increases. However, when enrollment declines, average costs rise because it is not possible to adjust instructional costs on a pro rata basis. In order to continue to offer an instructional program, the operational costs and faculty salaries become relatively fixed. Because of these fixed costs, enrollment size and trends become a significant factor in defining a practice of equity in the distribution of state appropriations.

There are other factors which influence instructional costs and hence, the distribution of state appropriations. Institutional location and clientele served are two important factors. To locate campuses near population and work centers to increase opportunity and access may require a public policy objective that places a higher priority upon an adequate geographical distribution of institutions and of instructional programs rather than achieving economies of scale. Some institutions or programs may be developed to meet the higher education needs of specific clientele groups, such as American Indians, Blacks, Spanish-speaking, refugees and others or those with a particular individual characteristic, for example the deaf, blind, and the slow-learner. Public policy objectives which establish institutions and programs to serve the needs of special clientele subordinate enrollment size and other economies to other objectives. In this regard, equity in the distribution of state appropriations mandates the recognition of the particular purposes of an individual college or university.

The subject of quality in higher education performance is also confused with the concept of equity. The subject of quality has many aspects and issues tied to it in the form of individual cognitive development, administrative and educational philosophy, admission criteria, faculty chraacteristics and degree programs. The aspect of quality of concern here is whether or not the quality of a college or university does and should vary with the amount of state appropriated support provided. The usual expectation is that the more funds the institution receives, the higher the quality it will achieve through lower student faculty ratios, more expenditure for books and equipment, and more time for faculty research and public service. The question usually arises of whether or not state government should provide one or more institutions of high quality. If the state does, then increased income must be distributed to the high quality institution or institutions. The quality issue has important implications for state decision-makers, particularly in recent years because the debate has reflected the structural changes occuring within higher education. The arguments frequently heard are as more average and below average students enroll in higher education, it costs more to educate them than the high quality student. Others argue that cost should be associated with the "value added" to an individual's skill through higher education and not with the skills as such. Finally, some persons suggest that the costs of higher education should be equated with the employability gained by an individual.

A workable definition of equity or fairness in the distribution of state government appropriations for higher education is to provide the same income resources from state general revenue funds to each institution of higher education for each full-time equivalent student enrolled in

comparable programs of instruction. It is recognized that there are special circumstances of enrollment size, location, stage of development, and of clientele served which require modification of or exceptions to this definition.

There are qualitative differences among institutions and students But there is no existing democratic or objective basis for saying that high quality deserves higher income or for saying that lower quality deserves higher income. State appropriation distribution should be based upon an equal resource support per student by program and by program level. Other income sources can then provide the margin of difference which the situation requires. The justification for this definition of equity in regard to the basic philosophy of higher education and the tradition of equality of opportunity in a democratic society, mandates that we strive to encourage persons to develop their cognitive and related skills to their fullest potential. The objective of equity then becomes an essential of state government appropriation practice.

There are three fundamental ingredients in an operational definition of equity. They are: (1) appropriation support based upon program costs; (2) appropriation support based upon work load; (3) appropriation support based upon a common definition of available income. Again, it must be emphasized that the concept of equity does not mean a distribution of support involving the same amount of money for each institution regardless of size, or the same amount of funds per student regardless of programs offered. The differences will be in the support to each institution based upon work load and program differentials. These differences are significant features of a concept of equity. The key element of equity

is that state institutions of higher education should be treated the same with respect to work load and in terms of program offerings.

The Objective of Adequacy.

The concept of adequacy is just as difficult to define in operational terms as is the concept of equity. Adequacy must be considered for two important reasons. First, institutions of higher education vary in size with economies of scale favoring the institutions with the largest enrollments and having an extensive array of program activities. However, public policy decisions, as previously stated, to being higher education institutions and programs within commuting distance of most students throughout a state may require small size high cost programs. Institutions supporting a public policy position which requires small size programs should not be penalized in their appropriation support simply because the public policy actions may have resulted in a relatively more costly operation than that of other institutions. Secondly, there is the need to consider appropriation support and the authorization of tuition charges to students as interrelated components of the total support available for institutional services. Each institution has to make a decision about what income level constituted adequacy for the programs of that institution. If the appropriation support was deemed to be inadequate, increases in tuition charges might be ordered by the governing board of the institution.

The issue of tuition and fee charges to students by public institutions became an important state government policy during the late 1960's and the early 1970's. The governing bodies of the state colleges and universities were no longer free to determine tuition and fee charges to students as they saw fit. Rather, the decisions made

by state governors and legislators about appropriation support inadvertently became decisions about tuition and fee charges. In some cases, the support appropriated was at less than the level considered to be adequate by institutional representatives and was accompanied by a prohibition in the appropriation act against any increase in tuition charges. Frequently, such action resulted from institutional representatives warning the legislators during the appropriation process that tuition would be increased if adequate amounts of funds were not appropriated. Governors and legislators, in other instances, found increased tuition charges as an alternative to raising taxes in order to provide an adequate level of income to public institutions of higher education. In both of these situations a decision is made as to what constitutes adequate support for the instructional programs of the state colleges and universities. In the final result regardless of how difficult the concept of adequacy is to define, in actual practice state governments are providing some kind of definition during the appropriation process.

As the previous comments implied it becomes necessary for the institutions, the executive agencies and the legislature to develop their own definition of what constitutes adequate income for the various programs offered by colleges and universities. The definition should be explicit if the appropriation process is to be satisfactory and rational. It is important to emphasize that adequacy involves issues of program objectives, program size, program technology, and program support. Generally, the first operational definition of adequacy tends to be incremental and to be larger than the current level of support. The

ultimate nature of planning programming, and budgeting in higher education is the effort to achieve adequacy.

The Budget Formula as a Means to Achieve Equity and Quality

Experience with budget formula indicates that there are difficulties and deficiencies as well as advantages in their use depending upon the degree of sophistication and caution employed by the user. Several types of criticisms are made about the formula approach to state appropriation support. One criticism, frequently surfacing in the literature and in the media, is that the formula does not provide recognition to the divergent quality of programs offered by state colleges and universities. The assumption is that there are variations in quality among public institutions as well as among programs and that there is a variation in cost, and, therefore, in income needs, which reflects the difference in quality. Further, this criticism assumes that the higher the program quality the higher its costs will be, and the more appropriated support it should have. But this criticism fails to provide any definition of quality other than high cost and does not explain why quality depends upon high cost. Finally, should state appropriation support encourage differences in quality among programs offered by public institutions if indeed they do exist?

A second criticism of budget formulas is that they tend to have a "leveling" effect upon program quality. The rationale for this criticism is that if state institutions of higher education receive the same amount of appropriations support per student, then they are all in the same financial situation, with each becoming a reflection of the other. However, this criticism does not take into account the possibility of

other types of income which may be obtained in addition to state appropriation and student tuition by the institutions. These other income sources may encourage differences among institutions and programs. More importantly, this criticism fails to explain what differences in cost and income are desirable or needed between public institutions of higher education enrolling students in the same or comparable instructional programs. This criticism will lack validity until justifiable differences in expenditure and, therefore, income needs can be explained and made acceptable and desirable as public policy.

Budget formulas are also criticized because their use may lead to a deduction of income received by an institution from sources other than state appropriations and student tuition charges. Some state budget offices and state legislatures have taken such action, but where this has occurred, the fault may be with an inadequate formula rather than an inherent defect of the formula procedure. Such action may indicate a political response to appropriation demands by the institutions rather than a thoughtful examination of an institutional situation. Formula budgeting can and should avoid this type of criticism.

In specific situations, particular formulas have had certain technical criticisms lodged against them. For instance, a particular formula has been criticized as not adequately estimating the cost requirements of certain programs. Another formula has been criticized because it is supposed to have perpetuated inequities that existed among institutions prior to the development and implementation of the formula. Also, as enrollments have stabilized or declined in some state colleges and universities, formulas have been criticized as being inadequate for

changing circumstances because they are "enrollment-driven." To some degree each of these criticisms may have had merit and each must be considered in the development and use of budget formula.

There are advantages to the formula budget method which are recognized and acknowledged. The procedure of formula budgeting does afford an objective method of determining the instructional expenditure and income needs of state colleges and universities on an equitable basis. Budget formulas tend to reduce or eliminate political competition among state institutions. The budget formula approach provides state budget officers, executive agencies, legislative budget officers, and legislators with an understandable and fairly uncomplicated mechanism for dealing with the expenditure and income needs of public institutions. Formula budgeting enables the college or university to project their future expenditure and income situation on a regular basis. Finally, budget formulas represent a resonable compromise between public accountability for state institutions of higher education and institutional autonomy.

The formula approach to budgeting is the best available method developed to date to achieve a satisfactory relationship between state government and state institutions of higher education in the allocation of state appropriation support for instruction. The formula budget should be developed and used in a manner which emphasizes its advantages and minimizes its potential deficiencies.

Summary and Conclusions

The objectives in state government support of higher education should be equity and adequacy. Equity is not defined in terms of equality of income among state institutions of higher education, nor is it defined in

terms of differential quality among state universities and colleges. The definition of equity is the provision of equal support for state colleges and universities based upon program differences and enrollment load. Every student in every public institution of higher education enrolled in comparable programs of instruction by fields of study and level deserves the same instructional support as every other student. Each state college and university should have its primary support needs met on a comparable basis with respective allowance made for size, physical plant resources, and changing circumstances.

The need for equity can be satisfied by a formula that results in an equality of appropriation support for instruction based upon two sources of income: the state government appropriation for departmental instruction and institutional support plus the general instructional charge to all students. All other sources of outside income then become an add-on for the benefit of the individual state institution which generates this additional income. This position is recommended for two reasons. First, the arguments on behalf of equity in the distribution of available income are satisfied by the restricted definition of available income. Secondly, upon the acknowledgement of differences among state institutions of higher education based upon the differences in age, tradition, qualitative status, and in the ability to attract outside income. The convictions put forth here do not accept the position that the purpose of a state appropriation formula is to achieve a leveling of income resources among various state colleges and universities.

A state government budget formula for the support of higher education requires continuous attention. Formula revision must be made from time to time to account for changing conditions and new technologies. The

formula should also be revised as costing techniques are improved and as cost standards are developed. However, the central purpose of a formula should not be lost in the process of revision: to clearly present the appropriation needs and alternatives in an understandable format, to ensure adequacy of state government support to make available desired higher education services, and to achieve equity in the distribution of state appropriation support to public institutions of higher education.

It should be clearly stated that not all state appropriations for higher education can or should be based upon formula calculations. It is recommended that instructional activities be funded on a formula basis in order to achieve equity and adequacy in the distribution of the available appropriation. Other needs exist which are not susceptible to a formula method of funding. State government decisions to appropriate funds for research, public service, student aid, and for operation of a teaching hospital must be determined upon the basis of the particular programs to be funded. Generally, on an ongoing basis such programs will be provided appropriations on an incremental basis. Programs such as these are subject to alteration with changing objectives, changing circumstances, and changing priorities.

PART II

A COMPARISON OF STATE FUNDING MECHANISMS

The following critique reviews funding mechanisms for determining operating and capital outlay needs currently employed in several States. The impetus for the recent adoption of many of these funding mechanisms is the growing demand for state officials to provide specific information that addresses public concerns and the need to improve decision-making for financing postsecondary education. The latter need has frequently mandated the refinement of state information bases which effect decision-making capability in both information and process. Public concerns manifested in issues of accountability, educational opportunity, and assessment coupled with state level information needs for the finance and coordination of postsecondary education imposes the demand for in-depth evaluation and measures of performance for institutions and programs. The development and implementation of these funding mechanisms by the various states is an attempt to provide more rational approaches for presenting, justifying, and defending postsecondary education costs, policies and accomplishments by state legislators, budget personnel and education agencies. Inadvertently, some of the funding mechanisms have resulted in a more complete understanding and appreciation for the significance of the contribution made by postsecondary education to the state and its citizens which had not been previously visible.

Review Techniques: Formulas vs. Indicators

Formulas. In almost every state quantitative guidelines and measures are part of the budgetary process. However their use is quite diverse. For the purpose of this review states are classified as either formula states or indicator states based on how qualitative measures are used in computing only the instruction and departmental research portion of the budget.

- Formulas generate organizational budget requests. To a greater or lesser extent, executive and legislative staff recognize these as either limiting or designating the factors for review. Texas provides the best example of formula use among six formula states.

- Indicators are used to analyze, but not to generate budget requests. Detailed computations may have little or no relationship to the generation of budget requests, but rather they are used as indicators or measures of reasonable support after the requests have been computed. Washington affords a good example of the use of indicators among 10 indicator states.

Formulas for determining the instructional and departmental research portion of the budget request are complex. Factors such as student credit hours, student faculty ratios, and unit costs require precise definition, frequently by as many as four different levels (lower division, upper division, graduate I and II).

In six states where the instructional and departmental research portion of the budget is generated by formula, it appears that state agencies use formulas for other functional areas of the budget. Conversely, the use of formulas for other functional areas in the 10 indicator states is limited. In over half of the indicator states, they are not used at all.

Formula calculations for instruction and departmental research and other functional areas may generate from less than 20% of the total higher education operating budget request, as in Wisconsin where formulas are used for incremental increases in the instructional area and for physical plant, libraries, and student services, to more than 90%, as

in Mississippi where formulas cover the entire educational and general expense budget.

Cost Comparisons. In 13 of 17 states at least one state-level analysis of instructional costs is performed, either within the state or across states. The development of program costs should in theory provide a better basis for state agencies to determine the comparative performance and budget requirements of programs. However, such comparisons are difficult to make because program outputs are not easy to specify, resulting in comparisons which can be misleading. Complex analyses are needed because unique programs at different instructional levels have different costs. Additionally, comparisons assume that comparable cost data are available which is not the situation nationally and is rarely so within a single state. In the area of faculty salaries, where relatively comparable national data are available, comparative analysis appears to be the rule.

Budget Base Review. Budgeting for higher education is also incremental. Agency review focuses upon changes from last year's appropriation, usually on those changes that can be attributed to increased costs, enrollment growth, and new programs. The budget base is generally equated as last year's appropriation and is commonly unexamined except for a few specific issue areas. This generalization must be explained because base budgets are or have been subject to closer examination and reduction in some states. The reasons for close budget base scrutiny are the leveling of enrollment growth at some campuses, competition of other state services for a larger share of state revenues, and budget reform measures which shift emphasis to the

ongoing activities in the budget base. The significance of the revenue factors is apparent because as state revenue growth is attenuated by inflationary cost increases, higher education's budget base may be the only source of new program funds. The most frequently used review procedure by state agencies is a review of special issues. A special issue analysis is an agency investigation of a current budgetary issue in higher education. Most special issue studies are developed as informal reports intended for distribution within the agency itself.

Current Utilization of Formulas

States which were found to be using a procedure for funding higher education which was in accordance with the definition given in Appendix A of the report for a "budget formula" were considered to be formula-states and were included in the comparative analysis.

A national survey indentified 25 states in which budget formulas were in use during the 1972-73 or 1973-74 fiscal years, or the 1973-75 biennium. These states are identified in Table I which presents the extent to which budget formulas were in use by states in 1973. The comparative analysis and evaulation of existing budget formulas appears in Part III of this report.

TABLE I
EXTENT TO WHICH BUDGET FORMULAS ARE USED BY THE STATES

STATE	BUDGET FORMULA USED	NOT USED	STATE	BUDGET FORMULA USED	NOT USED
Alabama	X		Montana		X
Alaska		X	Nebraska		X
Arizona		X	Nevada	X	
Arkansas	X		New Hampshire		X
California		X	New Jersey	X	
Colorado	X		New Mexico		X
Connecticut		X	New York	X	
Delaware		X	North Carolina		X
Florida	X		North Dakota	X	
Georgia	X		Ohio	X	
Hawaii		X	Oklahoma	X	
Idaho		X	Oregon		X
Illinois		X	Pennsylvania	X	
Indiana		X	Rhode Island		X
Iowa		X	South Carolina	X	
Kansas		X	South Dakota	X	
Kentucky		X	Tennessee	X	
Louisiana	X		Texas	X	
Maine		X	Utah		X
Maryland	X		Vermont		X
Massachusetts		X	Virginia	X	
Michigan		X	Washington	X	
Minnesota	X		West Virginia	X	
Mississippi	X		Wisconsin	X	
Missouri	X		Wyoming		X
		TOTALS		25	25

PART III

CRITERIA AND CHARACTERISTICS OF STATE FORMULAS

The information presented in this section was obtained by comparing each of the 25 budget formulas in respect to (1) functional budget areas recognized, (2) base (variable) and formula (fixed) factors used, (3) methods of computation, and (4) extent of differentiation among academic areas, levels of instruction, and institutions.

Budget Areas Recognized by Formulas

The standardized accounting practices which served as an early antecedent to the development of budget formulas resulted in the general acceptance of colleges and universities of budget areas which paralleled the major functional activities of education and general expense. As used in this report, those budget areas were grouped and defined as follows:

1. Instruction and departmental research

   Includes compensation for academic administration, faculty members, supporting staff and clerical employees; instructional and laboratory expenses; travel; office supplies and equipment; faculty enrichment and recruiting; and other expenses for departments, colleges, and schools for instruction and unsponsored research.

2. Organized activities related to instruction

   Includes all expenditures for activities organized and operated in connection with the instructional departments and conducted primarily to give professional training to students, such as agriculture college creameries and demonstration schools for teacher education.

3. Libraries

Includes the expenses for all separately organized libraries, both general and departmental consisting of expenditures, salaries, wages and other operating expenses such as costs of procuring and maintaining the collections.

4. General administrative and general expenses

Includes all expenditures for the general executive and administrative offices which serve the institution as a whole, as well as other expenditures of a general character not related to any specific division of the institution which is budgeted separately.

5. Student Services

Includes all expenditures for administering undergraduate and graduate admission activities, processing and maintenance of student records and reports, student registration, counseling, and placement.

6. Organized research

Includes all expenditures for research projects which are organized, budgeted, or financed separately from the instructional departments.

7. Extension and public service

Includes all expenditures for activities designated primarily to serve the general public, including correspondence sources, adult study courses, public lectures, institutes, workshops, demonstration centers, package libraries, museums, and similar activities.

8. Physical plant operation and maintenance

Includes all expenditures for salaries, wages, supplies, materials, fuel and utilities, and other expenses in connection with the day-to-day operation of the physical plant and its maintenance.

Table 2 presents a comparison by formula of the budget areas addressed and indicates the considerable variation which exists among the states.

Computational Methods Used in Formulas

Recurring patterns between the application of base and formula factors in every formula component made possible the identification of three basic computational methods under which every calculation could be classified. They are: (1) the rate per base factor unit (RBFU) method where base factors such as credit hours or square feet were multiplied by specified rates per unit; (2) the percentage of base factor (PBF) method where the product was a specified percentage of a base factor such as total instructional salaries, etc.; and (3) the base factor-position ratio with salary rates (BF-PR/SR) method where FTE positions were first determined by applying specified base factor ratios to base factors such as credit hours, FTE enrollments, etc., and then multiplied by specified salary rates.

The Comparative Analysis

Appendix B outlines the methods of budgeting or allocating funds for instruction and departmental research.

Performance Criteria Developed for Budget Formulas

Previous studies of state budget formulas have developed and proposed performance criteria by which formulas can be evaluated to determine their acceptability in addressing the funding needs of public institutions of higher education. The following criteria have been identified in the literature as being the significant evaluative tools with which budget formulas should be examined:

1. A budget formula should recognize the diverse financial needs of institutions, as indicated by its sensitivity to the mission, role, institutional complexity, location, and any other factors which serve to differentiate among the financial requirements of individual colleges and universities.

2. A budget formula should be broad-based and addressed to the total financial operating needs (exclusive of auxiliary services) of institutions, as shown by its recognition of the individual functional areas of operation and where appropriate, should utilize quantitative data directly related to the financial requirements of each functional area to be funded.

3. A budget formula should take into account the varying costs of instruction, as demonstrated by its recognition of the varying funding requirements for individual disciplines as well as levels of instruction.

4. A budget formula should provide for the equitable treatment of all institutions of like types, as evidenced by its capability for treating data on similar programs in a uniform and comparable manner.

5. A budget formula should be objective, as indicated by its utilization of quantitative data in determining the financial needs of colleges and universities.

6. A budget formula should recognize the qualitative efforts of institutions,as demonstrated by its built-in incentives of additional funds for the successful completion of pre-stated instituionally defined goals and objectives.

7. A budget formula should promote efficiency and economy in operation, as indicated by its ability to facilitate comparisons among similar institutions and programs on a state, regional, or national level.

8. A budget formula should be designed to accommodate the dynamic nature of higher education, as demonstrated by its flexible design and its provision for the periodic change of fixed inputs and/or revisions.

9. A budget formula should lend itself to clarity for and comprehension by all parties concerned, as shown by its straightforward construction which clearly demonstrates the relationship between fixed and variable components.

10. A budget formula should not be used for the detailed control of expenditures, as demonstrated by its being applicable only for justifying budget requests or the allocation to colleges and universities, and for limited internal budgeting between functional areas, discipline areas, and levels of instruction.

Acceptability of Current State Budget Formulas

Table 2 summarizes the extent to which budget formulas used in twenty-five states satisfied the performance criteria objectives previously stated. Twelve of the twenty-five states meet six or more of the criteria which, according to the literature, constitutes the minimum standard of acceptability for budget formulas. None, however, satisfied all eight criteria. Five states have budget formulas which satisfied seven criteria--the Colorado, South Carolina, and South Dakota formulas were not broad-based, while the Tennessee and Texas formulas both lacked provisions for recognizing the diverse financial needs of different institutions. The

TABLE 2

EXTENT TO WHICH BUDGET FORMULAS USED IN TWENTY-FIVE STATES SATISFIED THE PERFORMANCE CRITERIA OBJECTIVES *

	Most Important			Of Some Importance				
States	Clear and Comprehensible	Flexible	Not Used For Detailed Control	Recognizes Diverse Financial Needs	Equitable	Broad-based	Recognizes Varying Instructional Costs	Objective
Alabama	Yes		Yes		Yes		Yes	Yes
Arkansas	Yes	Yes	Yes		Yes		Yes	Yes
Colorado	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Florida			Yes	Yes	Yes		Yes	Yes
Georgia	Yes	Yes	Yes		Yes	Yes		Yes
Louisana	Yes		Yes	Yes	Yes		Yes	Yes
Maryland	Yes	Yes	Yes	Yes	Yes			Yes
Minnesota	Yes		Yes		Yes			Yes
Mississippi	Yes		Yes	Yes	Yes			Yes
Missouri	Yes		Yes	Yes	Yes			Yes
Nevada	Yes	Yes	Yes		Yes	Yes		Yes
New Jersey	Yes			Yes	Yes			Yes
New York (CUNY)	Yes		Yes		Yes			Yes

TABLE 2 (Continued)

States	Most Important: Clear and Comprehensible	Most Important: Flexible	Most Important: Not Used For Detailed Control	Most Important: Recognizes Diverse Financial Needs	Of Some Importance: Equitable	Of Some Importance: Broad-based	Of Some Importance: Recognizes Varying Instructional Costs	Of Some Importance: Objective
North Dakota	Yes			Yes	Yes			Yes
Ohio	Yes	Yes	Yes	Yes	Yes			Yes
Oklahoma	Yes		Yes	Yes	Yes			Yes
Pennsylvania	Yes	Yes	Yes	Yes	Yes			Yes
South Carolina	Yes	Yes	Yes	Yes	Yes		Yes	Yes
South Dakota	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Tennessee	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Texas	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Virgina			Yes	Yes	Yes			Yes
Washington			Yes	Yes	Yes			Yes
West Virginia	Yes	Yes	Yes	Yes	Yes			Yes
Wisconsin	Yes		Yes	Yes	Yes		Yes	Yes

* Gross, Frances M. "A Comparative Analysis of the Existing Budget Formulas Used for Justifying Budget Requests or Allocating Funds For the Operating Expenses of State-Supported Colleges and Universities." Knoxville, Tennessee: Office of Institutional Research, University of Tennessee, 1973.

budget formulas used in Arkansas, Georgia, Maryland, Nevada, Ohio, Pennsylvania and West Virginia each met six criteria.

Summary of Current State Budget Formulas

Budget formulas were used in twenty-five states. The formulas in twenty-one states were applied statewide. The Minnesota formula was applied only to state colleges and excluded the University of Minnesota system. The formula used in New York applied only to the CUNY system; the SUNY system used guidelines. In Oklahoma, two institutions were not funded under the regular formula; instead, their allocations were determined by a new program/formula budget system being pilot-tested. The Wisconsin formula was used only for the University of Wisconsin system.

A majority of the budget formulas were used for developing or justifying operating budget requests. Only four states-Florida, Louisana, Mississippi, and Oklahoma appeared to have actually used formulas for allocating lump-sum appropriations from their legislatures among institutions.

Two separate budgeting techniques were found to be in use: Zero-base budgeting (where the operating budget is developed anew each year and justified by objective or subjective data) was practiced by twenty-three formula states, and incremental budgeting (where the previous year's operating budget becomes the base to which additional requests - justified by objective or subjective data - are added) was practiced by two formula states - New York and Wisconsin.

Each budget formula consisted of several components or separate formulas. Each component was used for calculating the estimated funding requirements for one or more of the eight functional budget areas generally recognized by most colleges and universities.

Three basic computational methods were identified under which every formula calculation can be classified. They were: (1) the rate per base factor unit (RBFU) method; (2) the percentage of base factor (PBF) method; and (3) the base factor-position ratio with salary rates (BF-PR/SR) method. The RFBU method was used in 37 percent of the calculations and was the primary method used in estimating funds for student services. The PBF method was used in 40 percent of the calculations and was the primary method used in estimating funds for organized activities related to instruction, libraries, general administration and general expense, and organized research. The RBFU and PBF methods were used equally in calculating the estimated funds for plant operation and maintenance. The BF-PR/SR method was used in 23 percent of the calculations and was the primary method used in estimating funds for instruction and departmental research.

Twelve base factors were used in over 96 percent of the calculations. Projected FTE enrollment and student credit hours were the base factors used in 36 percent of the formula calculations (primarily calculating the estimated funding requirements for instruction and departmental research, libraries, and student services) and were limited to the RBFU and BF-PR/SR methods. The total instructional budget was the base factor in 15 percent of the formula calculations (primarily in calculating the estimated funding requirements for organized activities related to instruction, general administration and general expense, and extension and public service) and was used only with the PBF method.

Twelve budget formulas met the general standards of acceptance by satisfying the minimum requirements of at least six of the eight

Formula components followed two separate approaches in calculating the funding requirements for budget areas. The all-inclusive approach (where the total amount for one or more budget areas is determined through one calculation) was used in 58 per cent of the formula components, and the itemized approach (where the amount for one or more budget areas is the sum of several separate calculations, e.g., professional salaries, non-professional salaries, departmental expenses, etc.) was used in 42 per cent of the formula components.

Many budget formulas differentiated among academic areas and student or instructional levels. Sensitivity to these factors was most prevalent in the calculation of the estimated funding requirements for instruction and departmental research, where 14 states differentiated among academic areas and 23 states differentiated among student or instructional levels. Ten states (Alabama, Arkansas, Colorado, Florida, Louisiana, South Carolina, South Dakota, Tennessee, Texas, and Wisconsin) used budget formulas which differentiated among both factors.

A majority of the formula-states used budget formulas which differentiated among institutions or types of institutions. Seven states (Florida, Minnesota, Ohio, Pennsylvania, Virginia, Washington and West Virginia) specified (or allowed each institution to specify) different formula factors for individual institutions. Twelve states (Colorado, Florida, Louisiana, Maryland, Mississippi, Missouri, Nevada, New Jersey, North Dakota, Oklahoma, South Carolina, and South Dakota) differentiated among types of institutions (e.g., colleges, specialized schools, regional universities, and comprehensive research universities) by specifying different formula factors.

performance criteria. The Colorado, South Carolina, South Dakota, Tennessee, and Texas formulas met seven criteria, while the formulas used by Arkansas, Georgia, Maryland, Nevada, Ohio, Pennsylvania, and West Virginia each met six criteria. No state formula met all eight standards.

Three formula states (Maryland, New Jersey, and Ohio) were using program/formula budgeting systems which involved the development of expenditure models that were (a) based on historical expenditure records, (b) program-oriented, and (c) applied on a formula basis.

Conclusions

1. Budget formulas are more apt to be used and accepted in those states which spend relatively less on higher education, because formula funding at least assures institutions of higher education for a minimum foundation of state support on an equalized basis among colleges, regional universities, and comprehensive universities.

2. Budget formulas have been used predominantly in calculating the estimated funding requirements for those budget areas in which data related to expenditures were most easily quantifiable.

3. The incremental technique to budgeting does not lend itself to formula funding because it removes the base budget (last year's operating expenses) from objective determination or justification. Zero-base budgeting, on the other hand, goes well with formula funding in that the entire operating budget is developed anew each year on the basis of objective data.

4. The all-inclusive approach for estimating funding requirements for each budget area is less detailed and may be more easily understood

by legislators, educators, and the public. However, its use restricts the number of base factors which serve as indicators for estimating resource requirements and may result in a budget request that bears little resemblance to actual needs. Conversely, an itemized approval may result in a budget formula which is quite complicated, but it does add greater refinement and accuracy to a formula by permitting a broader base for resource requirement predictions.

5. The comparative analysis of formula components used in each state in estimating funding requirements for instruction and departmental research revealed two philosophies toward the financing of higher education. Eight states which used formulas on a statewide basis (Alabama, Arkansas, Florida, Georgia, Nevada, Tennessee, Texas, and Virginia) made no distinction among institutions or types of institutions when allocating funds for instructional programs. Instead, they differentiated among instructional levels and/or academic areas. The remaining 13 states which applied formulas on a statewide basis differentiated among institutions or types of institutions as well as instructional levels and/or academic areas. This policy recognized the diversity of instructional costs and institutional differences and reflected the commitment of many states to establish or maintain one or more outstanding institutions of higher education.

6. The large differences which existed among individual institutions and among individual state systems of higher education precluded the development of a single "model" formula. Each formula was designed for the system of higher education to which it applied, and each formula had shortcomings that might be more pronounced if applied in another state.

Recommendations

1. Budget formulas should be used only for calculating the funding requirements of those budget areas for which exist base factors with a high correlation to their historical expenditures. The base factors recommended for consideration in each budget area are:

Budget Area	Base Factors
Instruction & departmental research	Projected FTE enrollments or credit hours
Organized activities related to instruction	Projected FTE enrollments or instructional budget
Libraries	Projected FTE enrollments or instructional budget and collection deficiencies
General administration and general expense	Projected FTE enrollments and the total educational and general budget (excluding GA and GE)
Student Services	Projected FTE enrollments or instructional budget
Organized research	Research cost-sharing
Extension and public service	Continuing education units and instructional budget
Physical plant operation and maintenance	Square feet of building space, building replacement cost, or campus acreage

In calculating the budget or allocation for instruction and departmental research, the formula should recognize the varying costs of instruction by differentiating among each level of instruction within each academic area at each institution.

2. Budget formulas should not be used for the equalization of institutions. Instead, formula funding should serve as a minimum foundation for higher education, and the actual state appropriation for each institution should not be reduced by unrestricted revenue from the sale

of educational services, federal or local government grants, or from any source except student tuition and fees. This would provide for the improvement of low-quality programs without jeopardizing the leading "centers of excellence" or without eroding their initiative for self-improvement through increased non-state revenue.

3. There should always be the provision for an institution to override the formula-calculated amount in its operating budget request with an additional request supported by both objective and subjective data.

APPENDIX A

DEFINITION OF TERMS

The following terms are used throughout this report, and are therefore defined in order to provide clarity and continuity for the reader.

Appropriation. A term used to designate an authorization granted by a state legislative body to make expenditures and to incur obligations for specific purposes. The appropriation is usually limited in amount and time when it may be expended.

Base factor. Objective (quantitative) data which describes some aspect of past, present, or future) of a specific institution (e.g., enrollment, square feet of building space, etc.) and is used as input to drive a budget formula.

Budget formula. A set of statements which detail a procedure for manipulating variable or quantitative data applicable to an institution of higher education (base factors) by pre-established fixed data (formula factors) to produce the estimated future funding requirements of the institution. A budget formula may consist of several sub-section or components (i.e., separate formulae for each functional budget area) and may be expressed algebraically.

Budget request. A request for a legislative appropriation of funds that is initiated by an institution and transmitted to the governor through a state budget office (or through a coordiating or governing agency on the institution's behalf. The budget request will have been developed in accordance with the guidelines of the existing budget formula.

Current operating expenses. Expenditures during a single fiscal year for the salaries and wages, materials and supplies, and other operating costs of the functional budget areas.

Formula factors. Pre-established factors specified in a budget formula that are applicable to all institutions or types of institutions (e.g., student faculty ratios, rates per base factor unit, percentages, etc.)

Functional budget areas. The grouping of activities and their corresponding funding requirements according to the broad functional activities within an institution of higher education. The eight generally recognized functional budget areas consist of (1) instruction and departmental research, (2) organized activities related to instruction, (3) libraries, (4) general administration and general expense, (5) student services, (6) organized research, (7) extension and public service, and (8) physical plant operation and maintenance.

Guidelines. A set of statements which define parameters for budget requests (e.g., minimum and maximum number of positions, percentage ranges, etc.) but do not constitute a budget formula.

Institution. A college or university considered to have sufficient independence for classification as a separate institution under the board and its central administrative staff.

Objective data. Quantified information such as that concerning programs, costs, or the relationship between programs and costs which is expressed in uniform units of measurements that can be manipulated mathematically. Examples are: (a) in program measurements, the use of semester or quarter credit hours to measure the amount of formal instruction, (b) or square

feet of floor space to measure the requirements for building maintenance and custodial service; (c) in the measurement of relationships between programs and cost, the computation of the cost per student credit hour of instruction at a particular level for a particular discipline, or the cost per square foot for custodial service.

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Florida	Teaching Salaries	Projected Credit Hours	Credit Hour-Faculty Ratios and Salary Rates	Teaching faculty FTE positions times average salary rates for each rank	25	5	
	Research Salaries	FTE Teaching Faculty	Teacher-Researcher Ratios and Salary rates	Research faculty FTE positions times average salary rates		3	
	Academic Administration Salaries	FTE Faculty	Faculty-Administrator Ratio and Salary rate	Administrative FTE positions times a given salary rate			
	Instructional Supporting Salaries	Academic FTE Positions	Academic-Clerical Ratios	Supporting FTE positions times the average rate at each institution			Separate ratios for comprehensive and regional universities
	Departmental Operating	Academic FTE Positions	Rate per FTE Position	Academic FTE position times a given rate			
Georgia	Teaching Salaries	Projected Credit Hours	Credit Hour-Faculty Ratios and Salary Rate	Teaching FTE positions times a given salary rate		3	
	Research Salaries	FTE Graduate Faculty	Grad. Faculty-Researcher Ratio and Salary Rate	Research FTE positions times a given salary rate		Graduate Level only	

APPENDIX B
METHODS OF BUDGETING OR ALLOCATING FUNDS FOR INSTRUCTION
AND DEPARTMENTAL RESEARCH ***

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation		
					Acad. Areas	Stud. or Instructional Levels	Institutions
Alabama	Faculty Salaries and Departmental Operating Expenses	Projected Credit Hours	Credit Hour Complexity Indices and Rates per Credit Hour	Total weighted credit hours times a rate per credit hour	15	3	
	Academic Administration Salaries	Total Faculty Salaries and Departmental Operating Expenses Budgeted	Percentage	A percentage of the base factor			
Arkansas	Faculty Salaries	Projected Credit Hours	Rates per Credit Hour	Credit hours times rates per credit hour at each level for each academic area	16	5	
Colorado	Faculty Salaries	Projected Credit Hours	Credit Hour-Faculty Ratios	Faculty FTE positions times average salary rates	40	9	Separate salary rates for each institution
	Academic Administration Salaries	FTE Faculty	Faculty-Administrator Ratio	Administrative FTE positions times average salary rates			Separate salary rates for each institution

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Minnesota	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	New faculty FTE positions times a Given salary rate	Ratios given for high and low cost areas	3	
	Instructional Supporting Salaries	Projected FTE Enrollments	Student-Staff Ratios and Salary Rates	Supporting FTE positions times given salary rates			Fixed number of FTE positions per institution plus additional number based on enrollments
Mississippi	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rate	Faculty FTE positions time a given salary rate		3	
	Other Instructional Expenses	Total Faculty Salaries Budgeted	Percentages	A percentage of the base factor			Separate Percentages for colleges and universities
Missouri (Governor's formula)	Total Instructional Costs	Projected Credit Hours	Rates per Credit Hour and credit hour complexity indices	Weighted credit Hours times a given rate		7	Separate rates for three types of institutions

-40-

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Georgia (Continued)	Instructional Supporting Salaries	FTE Faculty	Faculty-Clerical Ratio and Salary Rate	Supporting FTE positions times a given salary rate			
	Departmental Expenses	FTE Faculty	Rate per Position	Faculty FTE positions times a given rate			
Louisana	Faculty Salaries	Base Year Credit Hours	Rates per Credit Hour	Credit hours times rates given for each level in each academic area	9	5	
	Academic Administration and Supporting Salaries and Departmental Expenses*	Total Faculty Salaries Budgeted	Percentages	A percentage of the budget base			A higher percentage used for the comprehensive university
Maryland	Faculty Salaries	Projected Credit Hours	Credit Hour-Faculty Ratios	Faculty FTE positions times given average salary rates (by rank)		4	Ratios for three ranges of credit hour production, and salary rates for three types of institutions
	Other Instructional Expenses	Total Faculty Salaries Budgeted	Percentages	Should approximate a given percentage of the base factor			

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Nevada	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratio and Salary Rate	Faculty FTE positions times given salary rate			
	Instructional Supporting Salaries and Departmental Expense	FTE Faculty	Rate per FTE Position	Faculty FTE positions times a given rate			
New Jersey	Total Instruction and Departmental Expenses**	Projected FTE Enrollments	Rates per Student	FTE students times given rates		4	Separate rates for three types of institutions
New York (CYNY formula)	Faculty and Academic Administration Salaries	Projected FTE Enrollments and Base Budget	Student-positions Ratios and Salary Rates	Base budget (preceding year) plus sum of new FTE positions times average salary rates (for each position type)		3	
	Clerical and Laboratory Positions	FTE Faculty and Base Budget	Faculty-Position Ratios and Salary Rates	Base Budget plus sum of new FTE positions times average salary rates (for each position)		3	

APPENDIX B (Continued)

State	Line Item	Base (Varible) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
New York (continued)	Operating Expenses	Projected FTE Enrollment	Rate per student	Base budget plus sum of additional FTE students times a given rate			
North Dakota	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	Faculty FTE positions times given rates		3	Separate rates for colleges & universities
	Other Instructional Expenses	Total Faculty Salaries Budgeted	Percentage	A percentage of the base factor			
Ohio	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios	Faculty FTE positions times average salary rate (at each institution)		4	Each institution uses own average salary rate
	Other Instructional Expenses	Total Faculty Salaries Budgeted	Percentages	Within a percentage range of the base factor			
Oklahoma	Instructional Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	Faculty FTE positions times given salary rates		3	Separate salary rates for colleges & universities
	Other Instructional Expenses	Total Instructional Salaries Budgeted	Percentage	A percentage of the base factor			

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Pennsylvania	Faculty Salaries	Projected FTE Enrollments	Blank Factor	Faculty FTE positions (based on student-faculty ratios determined by each institution) times average salary rates (determined by each institution)		4	Each institution determines its student-faculty ratios and its average salary rates
	Other Instructional Costs	Total Instructional Salaries Budgeted	Blank Factor	A percentage (determined by each institution) of the base factor			
South Carolina	Instructional Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	Faculty FTE positions times given salary rates	19	3	Separate salary rates for colleges and universities
	Other Instructional Costs	Total Instructional Salaries Budgeted	Percentage	A percentage of the base factor			Separate percentages for colleges and universities
South Dakota	Teaching Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	Teaching faculty FTE positions times given salary rates	27	4	Separate rates for colleges, technical colleges, and universities

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
South Dakota (continued	Research Salaries	FTE Teaching Faculty	Teacher-Researcher Ratios and Salary Rates	Research Faculty FTE positions times given salary rates		4	Separate rates for colleges, technical colleges, and universities
	Other Instructional Salaries	FTE Faculty	Faculty-Staff Ratios	Supporting FTE positions times average salary rates (for each type of institution)			Separate rates for colleges, technical colleges, and universities
Tennessee	Total Instructional Costs	Projected Credit Hours	Rates per Credit Hour	Projected credit hours times rates given for each level within each academic area	30	7	
Texas	Faculty Salaries	Base Year Credit Hours	Rates per Credit Hour	Actual credit hours times rates given for each level and area	19	4	
	Academic Administration Salaries	Total Faculty Salaries Budgeted and Base Year Credit Hours	Percentage	A percentage (adjusted to reflect credit hours produced and institutional complexity) of total faculty salaries			

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculations	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
West Virginia	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios and Salary Rates	Faculty FTE positions times given salary rates		6	Separate Salary rates for graduate faculty
	Supporting Staff Salaries	FTE Faculty	Faculty-Staff Ratios and Salary Rate	Staff FTE positions times a given salary rate		2	Separate ratios for two instructional levels and academic administration
Wisconsin	Total Instructional Costs	Projected Additional Credit Hours and Base Budget	Rates per Credit Hour	Base budget (preceding year) plus additional instructional expenses (projected additional credit hours times rates for each level within each academic area)	7	4	Each institution calculates its own rates

* Includes funds for organized activities related to instruction, organized research, and extension and public service. service.

** Includes funds for public service.

*** Gross, Francis M. "A Comparative Analysis of the Existing Budget Formulas Used for Justifying Budget Requests or Allocating Funds For the Operating Expenses of State-Supported Colleges and Universities." Knoxville, Tennessee: Office of Institutional Research, University of Tennessee, 1973.

APPENDIX B (Continued)

State	Line Item	Base (Variable) Factors	Formula (Fixed) Factors	Method of Cost Calculation	Differentiation: Acad. Areas	Differentiation: Stud. or Instructional Levels	Differentiation: Institutions
Texas (continued)	Other Instructional Expense	Base Year Credit Hours	Rates per Credit Hour	Actual credit hours times rates given for each level and each academic area	19	4	
Virginia	Teaching Salaries	Projected FTE Enrollment	Student-Faculty Ratios and Salary Rates	Teaching Faculty FTE positions times given salary rates		7	
	Research Salaries	FTE Teaching Faculty	Teacher-Researcher Ratios and Salary Rates	Faculty research FTE positions times given salary rates		3	
	Academic Administration Salaries	Projected FTE Enrollments	Student-Administrator Ratios and Salary Rates	Administrative FTE positions times given salary rates		3	
Washington	Faculty Salaries	Projected FTE Enrollments	Student-Faculty Ratios	Faculty FTE positions times a salary rate (calculated by each institution)		4	Separate ratio for high cost areas at universities and each institution uses its own salary rate
	Other Instructional Expenses	FTE Faculty	Rate per FTE Position	Faculty FTE positions times a given rate		64	

-45-

APPENDIX C

The following resources were used in the preparation of this report:

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